

## IN THE CLAIMS

1-58. (Cancelled)

59. (New) A replication-competent adenoviral vector for selective cytotoxicity of a target cell, comprising first and second genes co-transcribed as a single mRNA wherein said first and second genes are under transcriptional control of a heterologous, target cell-specific transcriptional regulatory element (TRE), and wherein said first gene is an adenoviral gene and said second gene has a mutation in or deletion of its endogenous promoter and is under translational control of an internal ribosome entry site (IRES).

60. (New) The adenoviral vector of Claim 59, wherein said first gene is an adenoviral early gene essential for replication selected from the group consisting of E1A, E1B, E2 and E4.

61. (New) The adenoviral vector of Claim 59, wherein said adenoviral gene essential for replication is a late gene.

62. (New) The adenoviral vector of Claim 60, wherein said TRE is selected from the group consisting of a prostate antigen specific TRE (PSA-TRE), a glandular kallikrein TRE (hk-TRE), a probasin (PB-TRE), an alpha-fetoprotein TRE (AFP-TRE), a carcinoembryonic antigen TRE (CEA-TRE), a cell status TRE, a melanocyte cell-specific TRE, a mucin (MUC1) TRE, and a uroplakin TRE (UP-TRE).

63. (New) The adenoviral vector of Claim 62, wherein said glandular kallikrein TRE is a human glandular kallikrein TRE (hKLK2 TRE).

64. (New) The adenoviral vector of Claim 62, wherein said cell status TRE is an E2F-1 TRE.

65. (New) The adenoviral vector of Claim 62, wherein said melanocyte cell-specific TRE is a tyrosinase TRE or a MART-1 TRE.

66. (New) The adenoviral vector of Claim 62, wherein said uroplakin TRE (UP-TRE) is a human uroplakin II TRE.

67. (New) The adenoviral vector of Claim 59, wherein said second gene is a therapeutic gene selected from the group consisting of HSV-tk, cytosine deaminase (cd), a gene encoding the A chain of diphtheria toxin, ricin or abrin, a gene encoding a factor capable of initiating apoptosis, and a cytokine encoding gene.

68. (New) The adenoviral vector of Claim 67 wherein said therapeutic gene encodes HSV-tk.

69. (New) The adenoviral vector of Claim 67 wherein said cytokine encoding gene is selected from the group consisting of IL 1, IL 2, IL 6, IL 12, GM CSF, G CSF, M CSF, IFN-alpha, IFN-beta, IFN gamma, TNF-alpha, TNF-beta, TGF-alpha, TGF-beta and NGF.

70. (New) The adenoviral vector of Claim 69 wherein said cytokine encoding gene is GM CSF.

71. (New) The adenoviral vector of Claim 67 wherein said gene encoding a factor capable of initiating apoptosis is a Fas gene.

72. (New) The adenoviral vector of Claim 59, wherein said second gene is a reporter gene.

73. (New) The adenoviral vector of Claim 72 wherein said reporter gene is selected from the group consisting of lacZ gene, luciferase, alkaline phosphatase and green fluorescent protein.

74. (New) The adenoviral vector of Claim 60, wherein said first gene has a mutation in or deletion of its endogenous promoter.

75. (New) The adenoviral vector of Claim 60, wherein said first gene has a deletion or inactivation of an enhancer region.

76. (New) The adenoviral vector of Claim 74, wherein said first gene is an E1A gene and the endogenous E1A promoter is mutated or deleted.
77. (New) The adenoviral vector of Claim 75, wherein said first gene is an E1A gene and the endogenous E1A enhancer I is mutated or deleted.
78. (New) The adenoviral vector of Claim 74, wherein said first gene is an E1B gene and the endogenous E1B promoter is mutated or deleted.
79. (New) The adenoviral vector of Claim 75, wherein said first gene is an E1B gene which has a deletion in or mutation of the 19-kDa region.
80. (New) The adenoviral vector of Claim 59, wherein said adenovirus comprises an E3 region.
81. (New) The adenoviral vector of Claim 80, wherein said adenovirus comprises at least one intact open reading frame from the adenovirus E3 region selected from the group consisting of gp19k protein, 14.7k protein and 10.4k/14.5k protein complex.
82. (New) The adenoviral vector of Claim 59, wherein said IRES is from EMCV.
83. (New) The adenoviral vector of Claim 59, wherein said IRES is from VEGF.
84. (New) A composition comprising an adenoviral vector according to Claim 62, and a pharmaceutically acceptable excipient.
85. (New) A composition comprising an adenoviral vector according to Claim 70, and a pharmaceutically acceptable excipient.
86. (New) An isolated host cell comprising an adenoviral vector according to Claim 62.
87. (New) An isolated host cell comprising an adenoviral vector according to Claim 70.

88. (New) A method for propagating a replication-competent adenovirus vector comprising a target cell-specific TRE, said method comprising combining an adenovirus vector of Claim 59 ex vivo with mammalian cells that permit the function of a target cell-specific TRE, such that the adenovirus vector enters the cell and said adenovirus vector is propagated.